Penapisan Varietas Padi Gogo Toleran Cekaman Aluminium

The Screening of Aluminum Tolerant Upland Rice Varieties

M. Zulman Harja Utama

Jurusan Agroteknologi, Fakultas Pertanian Universitas Tamansiswa, Padang, Sumatera Barat, Indonesia
Jl. Tamansiswa No. 9 Padang 25136 Telp. (0751) 40020/Fax. (0751) 444170

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ABSTRACT

The screening of aluminum (Al) tolerant upland rice variety was studied with the objectives were: (1) to determine the most suitable method for selection of aluminum-tolerant upland rice variety and 2) to investigate the agronomic characteristics and the physiological adaptation mechanisms of aluminum-tolerant upland rice variety. The experiment was undertaken in two steps: 1) Screening of upland rice varieties which tolerant to Al stress using completely randomized design, and 2) screening of aluminum-tolerant varieties through factorial experiment with complete randomized design. The experiment showed that 1) screening of upland rice variety that tolerant and sensitive to aluminum stress can be administered by comparing root dry weights in aluminum stressed condition and in unstressed condition, 2) in term of agronomical aspect, aluminum stress-tolerant upland rice shows good growth, and the higher level of aluminum tolerance seems to have emanated from efficient NO_3^-, NH_4^+, and Ca^{2+} metabolism. Upland rice varieties recommended for cultivation in upland mineral acid area include Pandak Putih, Mulut Harimau, Kuning, Rantau Mudiak Kelabu, Towuti, and Sedane Tinggi.

Keywords: aluminum, Ca^{2+}, NH_4^+, NO_3^-, uptake